

PATENT ABSTRACTS OF JAPAN

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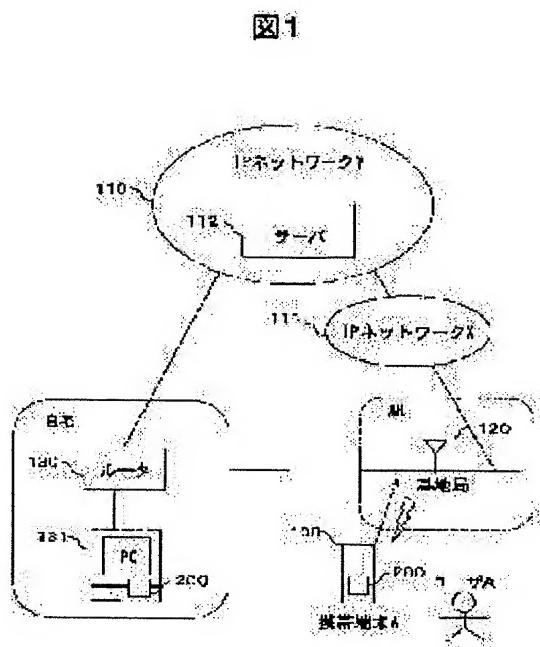
(21)Application number : 2002-069456 (71)Applicant : HITACHI LTD
 (22)Date of filing : 14.03.2002 (72)Inventor : SHIGA YOKO
 KOIZUMI MINORU

(54) STATUS NOTICE SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a status notice system wherein a plurality of predetermined members share location information of a person and a state depending on the location information without being conscious of notifying operation.

SOLUTION: A message client (200) mounted on a mobile terminal automatically updates a status being a value of denoting a state of a user A possessing the mobile terminal and registers the status to a server (112). Other users permitted to reference the status of the user A in advance references the status to recognize a current location and a state of the user A.



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[Date of final disposal for application]

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CLAIMS

[Claim(s)]

[Claim 1] It is based on the base station of one or more wireless, IP network, and an electric wave from said base station. The personal digital assistant which can specify own positional information, In the system which consists of two or more communicating software which is carried in said personal digital assistant and PC, and communicates mutually through said base station and said IP network A status edit means for said communicating software to hold the status which shows a user's condition, and to change said status based on the positional information of said personal digital assistant, A means to specify the partner who notifies a means to record said status, and the status updated at the time of renewal of said status, To having a means to notify said updated status, and a pan, said communicating software A means to hold the response policy which directs to perform actuation defined beforehand when in agreement with conditions with the status which the status and oneself which were notified from other communicating software manage, It is the notice system of the status by which it is having-means to perform actuation defined according to said response policy when information which is in agreement with conditions was received characterized.

[Claim 2] It is the notice system of the status characterized by for said communicating software having a means of said one status and said one or more positional information to construct and to register *****, in the notice system of the status according to claim 1, and changing the status based on this combination and current positional information.

[Claim 3] It is the notice system of the status characterized by having a means by which said communicating software edits said response policy in the notice system of the status according to claim 1.

[Claim 4] It is the notice system of the status characterized by having the function which reproduces the voice recorded beforehand as a means by which said communicating software performs said defined actuation in the notice system of the status according to claim 1.

[Claim 5] It is the notice system of the status characterized by said communicating software realizing presence service and a message service in the notice system of the status according to claim 1.

[Claim 6] The personal digital assistant which is a personal digital assistant in which the data communication by IP protocol is possible, and carried said communicating software.

[Claim 7] The notice system of the status characterized by said status being a character string showing a user's condition determined by said positional information in the notice system of the status according to claim 1.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the system which sends and receives the message based on positional information using a personal digital assistant.

[0002]

[Description of the Prior Art] There is a message service which holds electronic conversation because two or more users exchange a message for the real time other than the electronic mail which is the most general service in a means of telecommunication by which IP network was used. A message service is the service which thought real time nature and bidirection as important as compared with the electronic mail, and is also called a chat. In this message service, the service for having connected with a network and getting to know an exchangeable user for a message is presence service. With presence service, the status which shows a user's condition like "online" and "off-line" among users is exchangeable. The product of plurality [message service / presence service and] and service are offered, and standard specifications are prescribed by RFC2778.

[0003] Moreover, the equipment which is in a remote place as a means to get to know a specific partner's condition, based on the operation information on home electronics, such as an electric pot, is operated, and there is a system which tells existence of a user. Although this needs to scramble for communication neither with a telephone nor an electronic mail, the points that an informer and an informer-ed do not need to perform actuation actively responding to the needs to check existence of a partner are the features.

[0004] On the other hand, although a cellular phone and PHS are originally developed for a message, in addition to the message function, various services using positional information have appeared in these days. For example, the positional information of those who possess a personal digital assistant is computed based on the time of concentration of the electric wave from one or more base stations to a personal digital assistant, and the system offered to him or a third person is already offered as service. Moreover, based on the positional information of those who possess a personal digital assistant, the technique which controls the home electronics in a remote place is opened to JP,2000-299891,A. In addition, although there is 100 to several 100m error in the precision of the location detection by the personal digital assistant and the base station, precision can also be raised to 10m of numbers by using GPS.

[0005]

[Problem(s) to be Solved by the Invention] There are needs to connect the current position and a condition, among members of an organization, such as a family who is in the distant location,

and a friend or a firm. On the other hand, although it is possible to connect using an electronic mail, a message service, a cellular phone, etc., the user who notifies even if it is periodical and finite communication needs to perform actuation for a notice in detail. Moreover, it is necessary to receive, and the user who receives a notice also needs to open a message, or needs to take a telephone, and gives a feeling of restraint mutually. On the other hand, the service whose pursuer receives a candidate's positional information on a target on the other hand exists using the positional information by the personal digital assistant. However, such service is for taking care of an old man with a child or a fugue, and is not suitable for use between an equal family or a friend.

[0006] Moreover, although it is possible to contact to a specific member with a cellular phone to take the friend, the member of the same organization, and communication which are present in the same location at a going-out place, communication is difficult when it does not know who is in near.

[0007]

[Means for Solving the Problem] This invention is releasing the information depending on positional information to the partner decided beforehand automatically based on positional information, and offers the system which tells the condition of the informer who is dependent on positional information and positional information to a specific partner.

[0008] This invention is registering into a server the information of those who exist in a certain location to the group who consists of two or more members based on positional information, and offers the system which makes mutual discovery of a member easy.

[0009] This invention is based on an electric wave from one or more the base stations, IP networks, and the above-mentioned base stations of wireless. The personal digital assistant which can specify positional information, In the system which consists of two or more communicating software which is carried in the above-mentioned personal digital assistant or PC, and communicates mutually through the above-mentioned base station and the above-mentioned IP network A status edit means to change the status which the above-mentioned communicating software holds the status which shows a user's condition, and communicating software manages based on the positional information of the above-mentioned personal digital assistant, It has a means to specify the partner who notifies a means to record the above-mentioned status, and the status updated at the time of renewal of the above-mentioned status, and a means to notify the status by which updating was carried out [above-mentioned].

[0010] Furthermore, the above-mentioned communicating software holds the response policy which directs to perform actuation defined beforehand when in agreement with conditions with the status which the status and oneself which were notified from other communicating software manage, and when the information which is actually in agreement with conditions is received, it has a means perform defined actuation.

[0011]

[Embodiment of the Invention] Drawing 1 is a system configuration Fig. in the first example of this invention.

[0012] In this example, a base station 1 (120) is near and a cellular phone and a location-based service can be used. The user A who passes through this point possesses the personal digital assistant A (100). Moreover, the server (112) of the message service which the network provider Y employs, and presence service is connected to the IP network Y of the network provider Y concerned (110). The server (112) concerned offers the message service and presence service which are specified to RFC2778. He is able for the above-mentioned personal digital assistant A

to have the client (200) by the above-mentioned user A having joined a message service and presence service, and for User A to access a server (112) from the above-mentioned personal digital assistant A (100) through a base station (120), the IP network X (111) which the mobile phone service company X employs, and the above-mentioned IP network Y (110), and to use the above-mentioned message service and presence service.

[0013] On the other hand, the personal computer (it calls Following PC) (131) currently installed in User's A house is connected to the IP network Y (110) which Internet provider Y manages with access networks, such as ADSL, through the router (130). This PC also has the message client (200).

[0014] In the above-mentioned system configuration, the client (200) of a personal digital assistant A (100) can acquire positional information by the electric wave from a base station. Positional information is the information showing an address like a "Totsuka, Yokohama-shi, Kanagawa-ken YY town ZZ address."

[0015] Drawing 4 is the system configuration Fig. of the presence service which the server (112) in this example has. Presence service consists of the servers (112) and clients (412 413) which operate on a personal computer (it calls Following PC) etc. The above-mentioned server (400) holds a list (401) of the user linked to current presence service, and the access control list (402) which restricts reference of a user's information. A list (401) of a user consists of a user name (403), the address (404), and the status (405), and the user name (407) to which an access control list (402) can refer to the status with each user name (406) is registered. In the presence service concerned, the status is a character string explaining the condition of the user using presence service, and the any value "the waiting for communication", "under work", etc. can be taken. In this presence service, the above-mentioned client (412 413) can set a self-user's status as the above-mentioned server (112) (408). Moreover, if the above-mentioned client specifies a candidate user and performs notice registration of the status (409), the above-mentioned server will tell status modification of the user for delivery for a notice to the registered client, when a candidate user's status changes (410). Thereby, a client can know status change of a specific user. In addition, a user can limit the user who can refer to the status by setting up an access control list (402) (411).

[0016] Presence service is service for originally getting to know the connection member of a message service, and tells the existence on a network. It enables it to check the condition of the user for whom User A and User B depend mutually at the physical whereabouts or the physical whereabouts using presence service by interlocking User's A status with positional information in this example. Furthermore, without both the informer of the status and an informer-ed performing actuation for communication, the condition of having been dependent on positional information and positional information is checked, and it enables it to suit by preparing the structure to which a message client carries out automatic answering, such as audio playback and transmission of a message, to modification of the status which registered the status into the server automatically and was detected.

[0017] Drawing 2 is the functional block diagram of the message client (200) built in a personal digital assistant A (100). A message client is based on the setting information (500) on presence service. A status setup in presence service, Setup / registration demand transmitting section which publishes an access control list setup to the status concerned, and the registration demand of the notice of the status (204), The status acquisition section (205) which acquires other users' status, and the message-sending section which reads the message inputted by the user and transmits using a message service (210), With the message receive section which

receives the sent message and displays (206) The setting information on the presence service which begins and carries out the status of the self registered into a server (112) is registered. The presence setting editorial department (202) which changes and deletes, the presence setting Records Department holding a presence setup (203), With the response policy rule editorial department which defines the message and the status which are set as the object of the positional information acquisition section (201) which acquires positional information from a personal digital assistant (100), and automatic answering, and the contents of a response (208) With the response policy Records Department which records the edited policy (300) (209) The response policy evaluation section which directs activation of the processing defined beforehand according to the transmitting origin of the message which received, or the contents (207), It consists of the sound playback section (211) which reproduces the voice registered beforehand, and the message and the voice Records Department holding the message and voice which were registered (212).

[0018] Drawing 3 is drawing showing a response policy (300). A response policy (300) consists of one or more response policy rules (310). A response policy rule (310) consists of the condition section (301) which specifies the conditions of automatic answering, and the action section (302) which specifies the contents of automatic answering, and can specify the status (305) of the user who possesses the user name (303) which notified the status, the notified status (304), and the personal digital assistant with which the message client concerned was carried in the condition section (301). In the action section (302), the file name (308) of the file used in the processing (307) performed when their status and the message which received fill condition, and the specified processing is specified. [other users or] As the above-mentioned processing (307), playback of the voice registered beforehand and transmission of the message registered beforehand are specified, and which voice and message are used specifies by the file name (308).

[0019] For example, the response policy rule 1 (311) means reproducing "the registration sound 1", when the status of the possessor of the personal digital assistant which User's A status "was going home", and carried the message client concerned, or PC is "the waiting for communication." The response policy rule 2 (312) means transmitting "the registration sentence 1" as a message to a user with the same status, when the same as that of the status which the status of a user to the user B of arbitration who is the possessor of the personal digital assistant which carried the message client concerned, or PC when the status of arbitration is received received. The user registers such a response policy rule using the response policy rule editorial department (208) of a message client (200,200).

[0020] Drawing 5 is drawing showing the configuration of the setting information (500) on the presence service which a message client (200) holds. The setting information (500) on presence service consists of the status map (504) to which correspondences of positional information and the status are indicated to be the self-status (501), the status public presentation user list (502) which is a user name list of the user who permits reference of the self-status (501), and the status acquisition user list (503) which requires the notice of the status.

[0021] When new positional information is received from the above-mentioned positional information acquisition section (201), the above-mentioned presence setting editorial department (202) of the above-mentioned message client (200) is based on the status map (504) concerned, determines and updates the above-mentioned status (501) from the above-mentioned positional information, and registers the status concerned into a server. Moreover, the above-mentioned presence setting editorial department (202) sets a status public

presentation user list (502) as a server, and restricts the user who can acquire the self-status. Furthermore, the presence setting editorial department (202) demands a user's notice of the status included in the status acquisition list (503) concerned at a server. In addition, although the above-mentioned status map (504) consists of positional information (505) and the combination of the status (506), it is also possible to match two or more positional information and the one status. When two or more positional information in the sequence registered when two or more positional information is matched with the one status is acquired, it changes into the value which is having the above-mentioned self-status (501) matched.

[0022] Drawing 6 is the screen transition diagram of the personal digital assistant (100) in the case of creating the status map (504) in the setting information (500) on the above-mentioned presence service. The underline part in each screen is the character string which the user inputted, and is a character string which a personal digital assistant (100) displays on a screen other than this. In addition, the above-mentioned personal digital assistant (100) is equipped with the Maine carbon button which registers or checks the contents of a screen display, and the carbon button which can input an alphabetic character and a figure. The role of the Maine carbon button is displayed in the center of the display lower part.

[0023] The above-mentioned personal digital assistant (100) will display a status registration screen (901) on the display of a personal digital assistant (100), if it has the functional listing of communicating software (200) and a user chooses "status map creation" from the functional listing concerned. And a user inputs the character string showing the status into the status registration screen (901) concerned, and pushes and registers the Maine carbon button which means decision.

[0024] Next, the above-mentioned personal digital assistant (100) displays a positional information input screen (902). A positional information input screen (902) displays the alternative of the positional information input approach, and demands selection from a user. There are a "direct input" as which a user inputs positional information using a carbon button, and "currency information" using the current positional information which a personal digital assistant (100) acquires in the alternative of a positional information input. A user chooses the input approach of positional information using a figure carbon button. When choosing a "direct input" and choosing "currency information" for zero carbon button, the depression of the one carbon button is carried out.

[0025] By the positional information input screen (902), when a user chooses a "direct input", a personal digital assistant (100) displays a positional information direct-input screen (903). A user inputs positional information into the positional information direct-input screen (903) concerned, and does the depression of the Maine carbon button which means decision.

[0026] By the positional information input screen (902), when a user chooses "currency information", a personal digital assistant (100) displays a currency information screen (904). If a user is the positional information which checked and meant the displayed currency information screen (904), he will do the depression of the Maine carbon button which means decision.

[0027] After registration of positional information is completed, a personal digital assistant (100) displays a status map check screen (905). A status map check screen (905) displays the positional information matched with the registered status and the status concerned. A user checks the displayed contents and does the depression of the Maine carbon button which means registration. Now, the combination of the status and positional information is registered as a status map (504) in the setting information (500) on the above-mentioned presence service.

[0028] In addition, if a user chooses "refer to the status map" from the above-mentioned functional listing, the registered status map (504) will be displayed on a status map screen (906). A status map screen (906) changes on the status map check screen (905) which displays the selected status, when the registered status is displayed, and a user chooses the status of arbitration and does the depression of the Maine carbon button. A user can check a registered status map (504) with reference to the status map check screen (905) concerned.

[0029] Drawing 7 is a message sequence diagram in the case of performing communication based on positional information. User A and User B are families and have both joined the above-mentioned message service and presence service.

[0030] First, User B registers User A into the status public presentation user list (502) of presence setup (500), and a status acquisition user list (503) using the presence setting editorial department (202) of the message client (200) of PC (601). On the other hand, using the presence setting editorial department (202) of the message client (200) of the personal digital assistant A to possess, User A registers User B into the status public presentation user list (502) of presence setup (500), and a status acquisition user list (503), and matches two positional information "XX line Totsuka station", a "Totsuka, Yokohama-shi, Kanagawa-ken YY town ZZ address", and "under going home" with a status map (504) further (602). Namely, when a personal digital assistant A (100) receives a signal in order of "XX line Totsuka station" and a "Totsuka, Yokohama-shi, Kanagawa-ken YY town ZZ address", User A considers that it is under going home.

[0031] Next, User B and User A register the response policy rule 1 (311) using the response policy editorial department (208) of the message client of PC (131) to possess (603 604).

[0032] Furthermore, User B changes the status (501) under presence setup (500) into "the waiting for communication" at a house using the presence setting editorial department (202) (605). The presence setting editorial department (202) hands the changed status to setup / registration demand transmitting section (204). Setup / registration demand transmitting section (204) sets the status as a server (112) (606). Furthermore, it registers with a server so that User's A status may be notified (607).

[0033] On the other hand, User A passes through station area and hands the positional information acquisition section (201) of the message client (200) of a personal digital assistant A (100) to the presence setting editorial department (202) as positional information at the order which acquired "XX line Totsuka station" first, and then acquired and acquired the "Totsuka, Yokohama-shi, Kanagawa-ken YY town ZZ address." The presence setting editorial department (202) changes with reference to a status map (504) "during going home" (608), and hands setup / registration demand transmitting section (204). [which means going home the status (501) of a presence setup (500) after this] Setup / registration demand transmitting section (204) sets the above-mentioned status (501) as a server (112) (609).

[0034] A server (112) receives a status setting demand of User A, and notifies "under going home" to the message client (200) of User's B PC (130) (610). [which is the status after modification of User A] The status acquisition section (205) of a message client (200) receives a status informative message, and passes it to the response policy evaluation section (207). The response policy evaluation section (207) evaluates the example 1 (311) of a response policy rule. And when the status and the self-status which were passed fill condition, processing specified as action is performed. Specifically, the response policy evaluation section (207) directs to reproduce the registration sound 1 registered beforehand to the sound playback section (211) (613). The sound playback section (211) takes out the registration sound 1 from a message and

the voice Records Department (212), and is reproduced.

[0035] Thereby, User B hears the registration sound 1 and it knows User A "will go home." That is, User B can notify User A of the current position and the status, without User A and User B performing special actuation for communication.

[0036] Then, the second example is explained. The second example restricts and explains to difference with the first example.

[0037] Drawing 8 is a system configuration Fig. in the second example of this invention. In the area C in this example, a base station (120) is near and a cellular phone can be used. The user A using Area C possesses the personal digital assistant A (100a). Moreover, the server (112) of the message service which the network provider Y employs, and presence service is connected to the IP network Y of the network provider Y concerned (110). He is able for the above-mentioned personal digital assistant A to have the message client (200a) by the above-mentioned user A having joined a message service and presence service, and for User A to access the above-mentioned server (112) from the above-mentioned personal digital assistant A (100a) through a base station (120), the IP network X (111) which the mobile phone service company X whom User A has joined employs, and the above-mentioned IP network Y (110), and to use the above-mentioned message service. The personal digital assistant B was possessed, this personal digital assistant B (200b) had the message client (200b), and the user B (201) who uses the same area C on the other hand has joined a message service and presence service.

[0038] In the above-mentioned system configuration, the message client (200a) of a personal digital assistant A (100a) receives the signal which a base station (120) transmits, and identifies User's A whereabouts.

[0039] The configuration of the message client (200a) (200b) in this example, presence setting information (500), and a response policy rule (300) is the same as that of the first example.

[0040] Drawing 9 is a message sequence diagram in the case of discovering a friend. User A and User B are friends, and register User B into the status public presentation user list (502) of presence setup (500), and a status acquisition user list (503) using the presence setting editorial department (202) of the message client (200a) of the personal digital assistant A which User A possesses, and "Area C" and the status "Area C" which are positional information are further matched with a status map (504) (801).

[0041] On the other hand, User B registers User A into the status public presentation user list (502) of presence setup (500), and a status acquisition user list (503) using the presence setting editorial department (202) of the message client (200b) of the personal digital assistant B (100b) to possess, and "Area C" and the status "Area C" which are positional information are matched with a status map (504) (802).

[0042] User A registers the response policy rule 2 (313) using the response policy editorial department (208) of the message client (200a) of the personal digital assistant A (100a) to possess (803).

[0043] It goes into Area C, and the positional information acquisition section (201) of the message client (200b) of a personal digital assistant B refers to "Area C", delivery and the presence setting editorial department (202) refer to a status map (504) to the presence setting editorial department (202) as positional information, and User B changes the status (501) of a presence setup (500) into "Area C" (804), and hands setup / registration demand transmitting section (204). Setup / registration demand transmitting section (204) sets this status (501) as a server (112) (805). Furthermore, notice registration of the status is performed to a server so that User's A status may be notified (806).

[0044] Similarly User A goes into Area C. The positional information acquisition section (201) of the message client (200a) of a personal digital assistant A "Area C" to the presence setting editorial department (202) as positional information delivery and the presence setting editorial department (202) With reference to a status map (504), the status (501) of a presence setup (500) is changed into "Area C" (807), and setup / registration demand transmitting section (204) is passed. Setup / registration demand transmitting section (204) sets this status (501) as a server (112) (808). Furthermore, notice registration of the status is performed to a server so that User's A status may be notified (809).

[0045] Next, a server (112) notifies User's A status to the message client (200b) of User's B personal digital assistant B (810). A message client (200b) receives the notice concerned, and when the response policy evaluation section (207) evaluates the response policy rule 2 (312) and fills condition, it performs processing specified by action (811). The status and the self-status which were notified are specifically compared, and in being the same value, it transmits a message to User A by making the registration sentence 1 into the text (812).

[0046] The message receive section (206) of User's A message client (200a) receives the message concerned, and User A can know it, if User B is in the same location.

[0047] Each other can be discovered without User A and User B performing special actuation for communication by this.

[0048]

[Effect of the Invention] According to this invention, a partner's condition can be acquired even if an informer and an informer-ed do not perform actuation for a notice actively. For this reason, they are able for an informer and an informer-ed to be able to save the time and effort which repeats the same control and a finite notice, and to prevent a failure of actuation to perform, and restraint is not sensed. Moreover, a rough condition can be told.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a system configuration Fig. in the first example.

[Drawing 2] It is the functional block diagram of the message client in the first example.

[Drawing 3] It is drawing showing the response policy rule in the first example.

[Drawing 4] It is drawing showing the system configuration of the presence service in the first example.

[Drawing 5] It is drawing showing the presence setting information in the first example.

[Drawing 6] It is the screen transition diagram of the status map creation in the first example.

[Drawing 7] It is a message sequence diagram in the first example.

[Drawing 8] It is a system configuration Fig. in the second example.

[Drawing 9] It is a message sequence diagram in the second example.

[Description of Notations]

100 [-- PC,] -- A personal digital assistant A, 112 -- A server, 130 -- A router, 131 200 -- A message client, 131 -- PC, 110 -- IP network Y 111 -- The IP network X, 200 -- A message client, 120 -- Base station, 201 -- The positional information acquisition section, 202 -- The presence setting editorial department, 203 -- Presence setting Records Department, 204 -- Setup / registration demand transmitting section, 205 -- The status acquisition section, 206 -- Message receive section, 207 [-- The message-sending section, 211 / -- The sound playback section, 212 / -- A message and the voice Records Department 300 / -- A response policy, 500 / -- Presence setup.] -- The response policy evaluation section, 208 -- The response policy editorial department, 209 -- The response policy Records Department, 210

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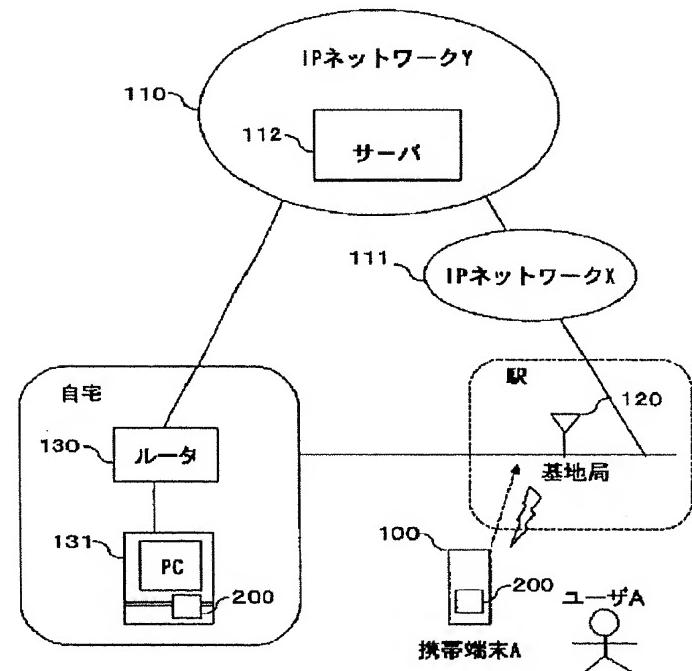
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DRAWINGS

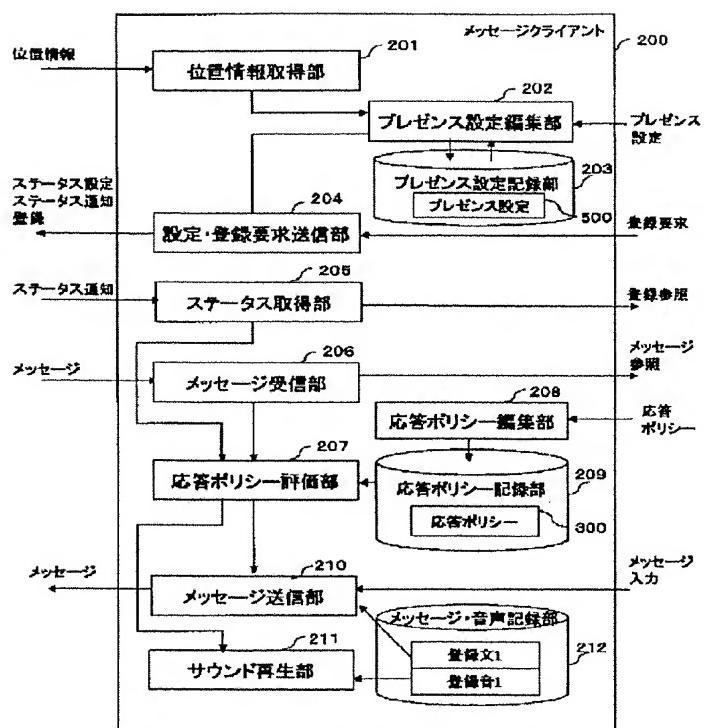
[Drawing 1]

図1



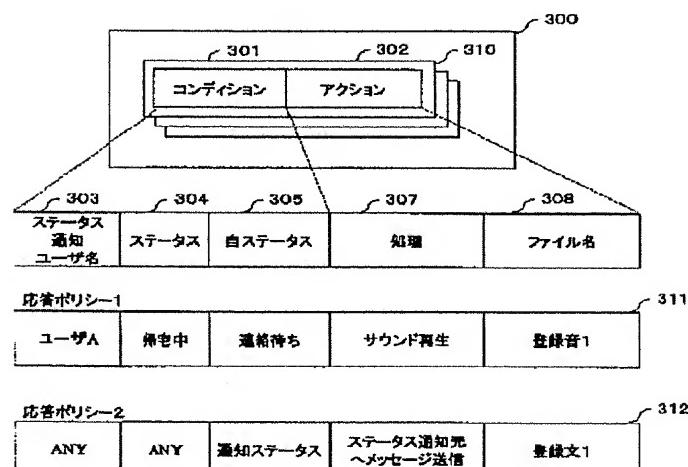
[Drawing 2]

図2



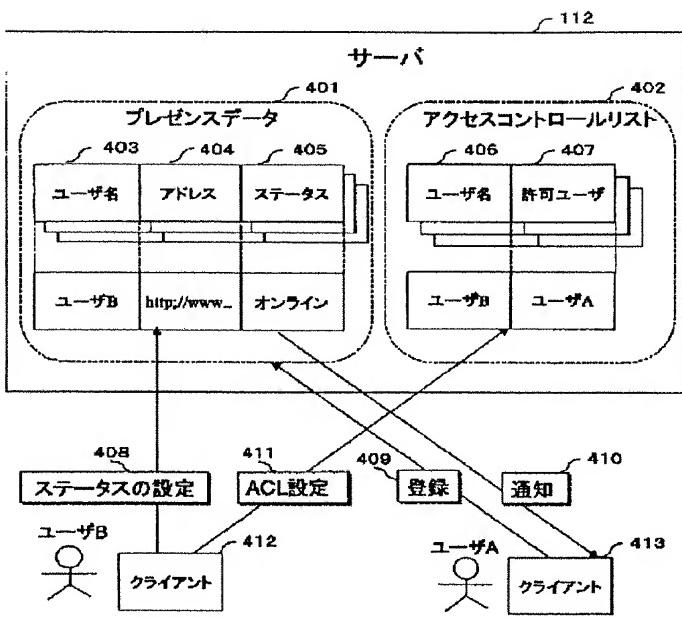
[Drawing 3]

図3



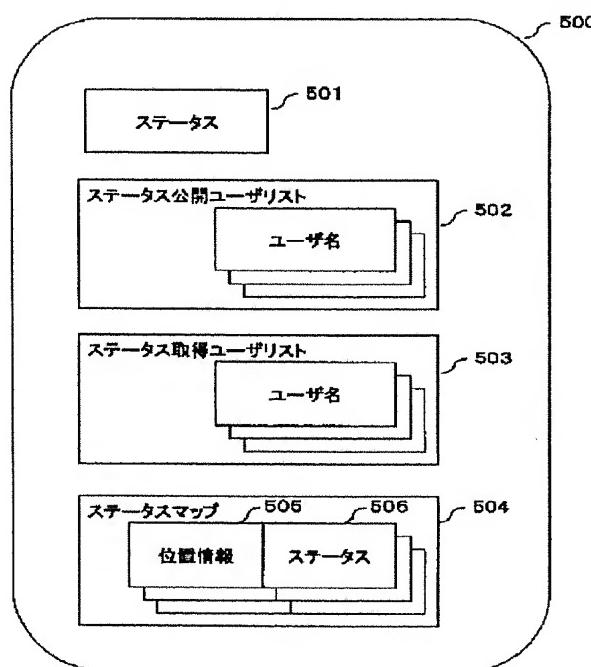
[Drawing 4]

図4



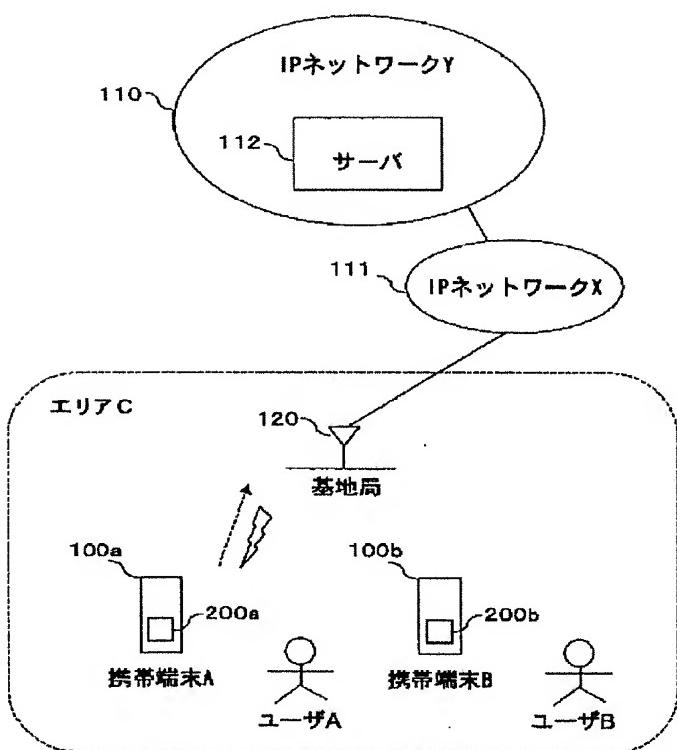
[Drawing 5]

図5



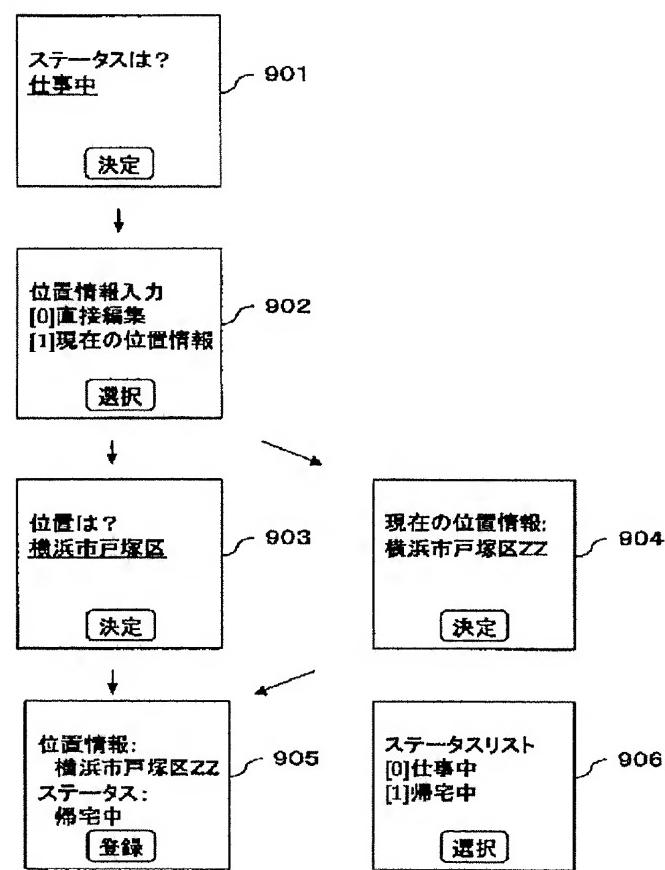
[Drawing 8]

図 8



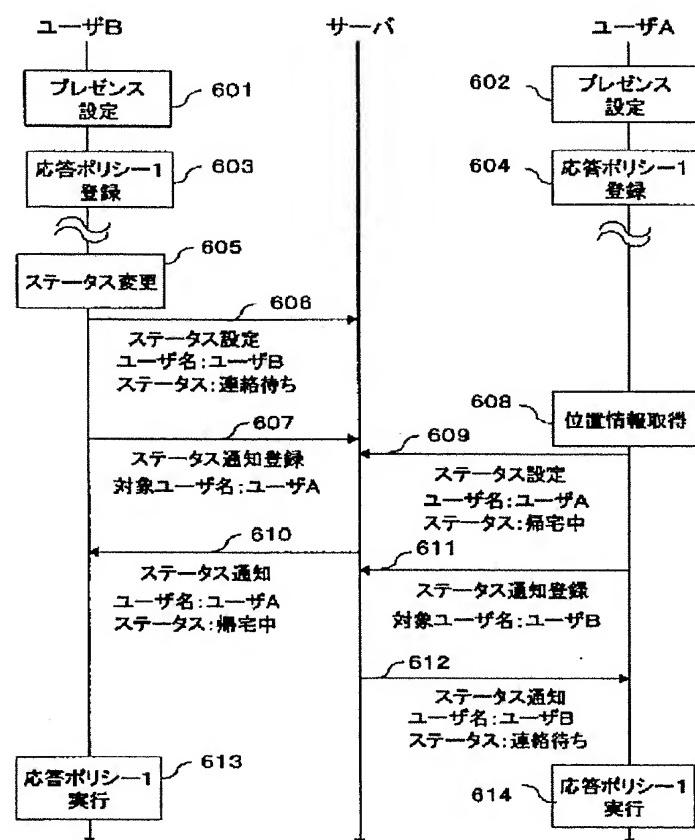
[Drawing 6]

図 6



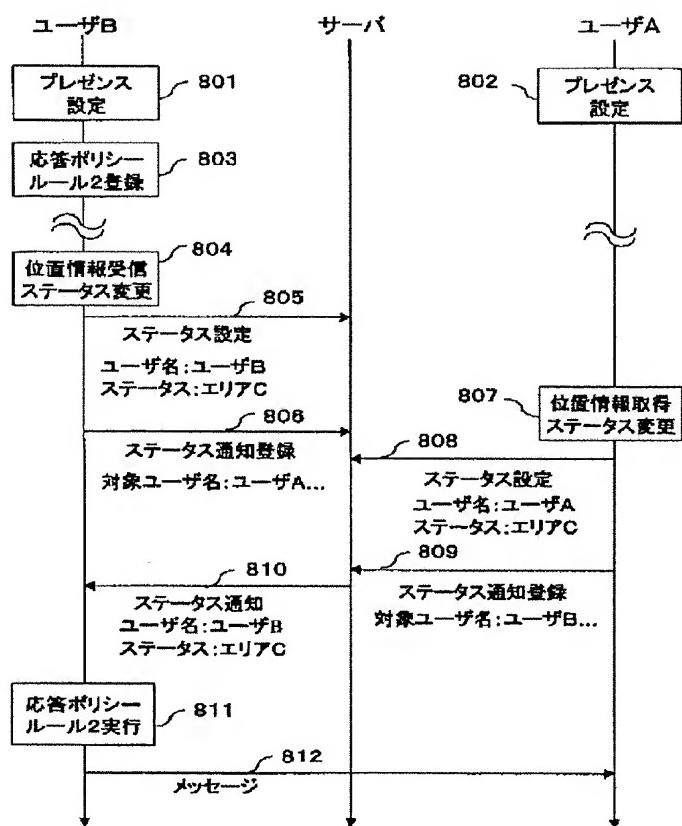
[Drawing 7]

図 7



[Drawing 9]

図 9



[Translation done.]